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pressed here — which had been uttered. "You came from us," said Mr. Saunders: "if you return to us, you will meet a welcome which has in it as much warmth as that which you have accorded to us. Upon all occasions, whether they be international or inter-scientific, I assure you that the American people, particularly the English-speaking American people, will find a cordial greeting on the part of any Englishman to whom they appeal."

The chair announced that the motion to discharge the committee had been withdrawn.

The only other response to the call for reports was made by Professor Young of the committee in relation to duty on scientific books. He said that the committee had prepared, and, he believed, had presented to congress, a bill on the subject stated, which had failed to reach congressional attention.

#### THE BOTANICAL CLUB OF THE AMERICAN ASSOCIATION.

THE meeting of the American association last year at Minneapolis attracted a larger attendance of botanists than usual. Without much consultation, a meeting of those interested in botany was called, a president and a secretary were chosen, and discussions, short communications, and papers upon botanical subjects, listened to. The Botanical club was thus inaugurated; and before the close of the session it was decided to do what was possible to secure a larger attendance of botanists at the next gathering in Philadelphia.

Although during the interim the prospect of a good attendance at the Philadelphia meeting had been fair, the most sanguine were surprised to find, that, as early as Monday preceding the opening, a number of botanists had arrived in the city; and by the following day a larger gathering could have been assembled than the total attendance at Minneapolis.

The first meeting of the club, of which several were held between Friday and Wednesday, was responded to by an attendance of about thirty, — a little below the average attendance for the subsequent meetings. Prof. W. J. Beal of Lansing, Mich., the president, took the chair; and Prof. J. C. Arthur of Geneva, N. Y., was appointed secretary to fill the vacancy caused by the absence of Professor Coulter. A paper by Dr. N. L. Britton of New York, on the composition and distribution of the flora of New Jersey, was read. The surface-features of the state were given, and the corresponding vegetation described. The work of cataloguing the plants is being done under the supervision of the State geological survey. The list at present has reached the very large total of nearly fifty-five hundred.

Prof. C. R. Barnes of La Fayette, Ind., spoke of the course of the fibro-vascular bundles in the leaf-branches of *Pinus sylvestris*. The two needle-leaves at the end of each short lateral axis contain each a paired bundle. The question at issue was whether this structure represented one or a pair of bundles, or whether it might not be a segment of the fibro-

vascular ring of the stem. A study of the early stages shows that the first change in the stem is to divide the fibro-vascular ring into halves at right angles to the plane of the leaves; and subsequently these divide again, sending one branch of each to each leaf. The paper led to much discussion by Professors Buckhout, Macloskie, and others.

Dr. Bessey of Ames, Io., described the opening of the flowers of *Desmodium sessilifolium*. They expand partially in the usual manner, then remain stationary till a particular sensitive spot at the base of the vexillum is touched by an insect, when the wings and keel descend with a jerk, the stamens are released, and the insect dusted with pollen.

Professor Mackloskie of Princeton, N. J., described the method of cross-fertilization of *Geranium maculatum* by bumblebees. Professor Dudley of Ithaca, N. Y., spoke of the torsion of stems of *Eleocharis rostellata*, and also on the protogynous character of some species of *Myriophyllum*. Mr. William H. Seaman of Washington, D. C., advocated the use of rather thick oblique sections in studying the structure of the fibro-vascular bundle, — a method that called forth a very strong protest.

Professor W. J. Beal gave a paper concerning the manner in which certain seeds bury themselves beneath the soil, which was discussed by Professors Bessey, Rothrock, and others. A paper by Prof. W. R. Lazenby of Columbus, O., on the prolificacy of certain weedy plants, embraced careful estimates of the average number of seeds produced by individual plants among various kinds of weeds. Dr. J. T. Rothrock of Philadelphia addressed the club on some phases of microscopic work, alluding particularly to micro-photography, its importance to the investigator, and the ease of execution.

Dr. Asa Gray called attention to the interesting discovery of Mr. Meehan regarding the mode of exposing the pollen in the common sunflower. He had found, that, contrary to the teachings of the textbooks, the pistil and stamens develop together until reaching full length, when the filaments rapidly shorten, and the anther-tube is retracted, exposing the style covered with pollen, the further changes being the same as usually stated. This Mr. Meehan construed to be a device for self-fertilization; while Dr. Gray showed, that, although bees carried pollen from one flower to another of the same head, they also carried it from head to head, which constituted crossing in the fullest sense. An interesting discussion followed, in which Professor Beal suggested that an excellent experiment would be to cover up the heads, and ascertain if any fertile seeds were produced. Dr. Gray thought it very likely there would; for, when cross-fertilization is not effected, self-fertilization often takes place. Mrs. Wolcott had proved this to be so; for, in covering up the flowers to keep birds away, she found that plenty of seeds were formed.

Dr. George Vasey of Washington gave some notes on the vegetation of the arid plains; which was followed by observations on the curvature of stems of conifers, by Dr. Bessey, in which he noted the bending of stems one, two, and even three years old.

Mr. Thomas Meehan discussed the relationship of *Helianthus annuus* and *H. lenticularis*; showing that there was a constant difference in the form of the corollas, the former being campanulate, and the latter tubular. The two are treated as one species in Gray's 'Synoptic flora of North America;' the one being considered a cultivated form of the other, — a view from which the speaker dissented. Mr. Meehan then spoke upon the fertilization of composites; concluding that the arrangements were such as to favor self-fertilization, which is opposed to the generally accepted view.

Prof. L. M. Underwood of Syracuse, N.Y., gave some statistics concerning the North-American Hepaticae. Of the two hundred and thirty-one species found north of Mexico, a hundred and twenty are peculiar to America: fully one-half the latter are not represented in any public or private herbarium in this country.

In a paper on the nature of gumming, or gummosis, in fruit-trees, Prof. J. C. Arthur detailed experiments from which the conclusion had been reached, that it was due to a de-organization of the cell-walls of the tree through the influence of some fungus, but not necessarily of a specific one. It had been produced experimentally by the bacteria of pear-blight and by *Monilia fructigenum*, the fruit-rot fungus; although the most common cause is doubtless the *Coryneum*, first described by Oudemans in Hedwigia.

At the final meeting the committee on postal matters then gave its report. This committee was appointed at Minneapolis to inquire into the various obstructions which the postal authorities throw in the way of exchanging specimens of dried plants. The efforts of the committee had been directed toward securing the passage of specimens bearing the customary written label at fourth-class rates of postage. The decision of the postmaster-general was read, stating that the present law could not be construed to permit the passage of specimens with written labels except at letter-rates, but expressing a willingness to bring the matter, at the proper time, to the attention of congress, the Canadian authorities, and the congress of the Universal postal union. Some discussion followed; and a motion was carried to continue the committee, and also instructing the president and secretary of the club to draft resolutions to be presented to the section of biology in order to still further promote the objects in view. These resolutions were acted upon by the biological section on the following day. Dr. Bessey was chosen president, and Professor Arthur secretary, for the next year.

Besides the reading of papers, the club took several excursions. On Saturday they went to the pine-barrens of New Jersey, about fifty participating. On Monday a party visited the ballast-grounds during the morning, and upon their return inspected the library and herbarium of Mr. I. C. Martindale of Camden, N.J. In the evening of the same day the Botanical section of the Philadelphia academy of sciences entertained the club, the Torrey botanical

club of New-York City, and other invited guests, at the rooms of the academy. About three hundred were present, and a thoroughly enjoyable time experienced. On the afternoon of Tuesday the club and its friends, in all about eighty, made an excursion to the Bartram gardens, one of the most interesting historical spots to botanists in this country; and the club then adjourned.

In reviewing the attendance of botanists at Philadelphia, and the work of the Botanical club, there is much reason for congratulation. About a hundred entered their names on the register of the club as botanists, or about eight per cent of the total attendance, one-half of whom are widely known for their attainments in the science. There was no lack of interesting papers and free discussion. Besides the important measures already referred to, the club was instrumental in securing the appointment of a permanent committee of the Association to encourage researches on the health and diseases of plants. But, above all, the augmented facilities for intercourse and acquaintanceship, and the impulse imparted to individual workers, through the influence of the club, are a sufficient *raison d'être*, and a promise of usefulness for the future.

#### PSYCHICAL RESEARCH IN AMERICA.

A MEETING was held in Boston, on Sept. 23, to consider the advisability of forming an American society for psychical research. Prof. W. F. Barrett, vice-president of the English society, was present, and gave an account of the work they are doing in England in the investigation of 'mind-reading' and the so-called spiritualistic phenomena, which last they always find to fail when the medium is securely bound. As one good result of the English society's work, it was stated that there had been a decrease in the activity of the society of spiritualists in London. It was the sense of the meeting, that if any thing could be done in this country to check the growth of the belief in the supernatural powers of 'mediums,' and to show what is the true explanation of such phenomena as 'mind-reading' and mesmerism, it would be a work which should enlist the assistance of American scientific men. Professor Barrett showed, that, in the case of 'mind-reading,' most of the results pointed to an unconscious guidance on the part of the person whose mind was being read, but there were residual cases he would not so explain. It was the opinion of those present, that the collecting of the stories of fulfilled dreams and anxieties would be fruitless, but that there were many questions of a physiological nature which should be investigated, and no longer be allowed to go unanswered or ignored. A committee was appointed to consider the whole matter of the formation of a society, or in what way it may seem best to undertake the work; and, at a meeting held last week, steps were taken for the formation of a society in America, of which we hope soon to report the complete organization.